REMARKS

Claims 1-24 stand rejected under 35 USC 103 over Gilliland '642 in view of Gilliland et al '627. Claims 1, 14 and 15 have been amended and it is believed that claims 1, 14 and 15 are patentable over the cited references.

The present invention is concerned with a method of forming a welded structure by arranging constituent pieces of the structure on a support surface. An extended two dimensional image of the arrangement of the constituent pieces is recorded and the positions of a plurality of weld points are determined by viewing the two dimensional image(s). A user input that specifies a welding method for each weld point is then received and welding apparatus welds the constituent pieces together at the weld points in accordance with the respective specified welding methods. The welding of the constituent pieces with the welding apparatus is controlled on the basis of the determined positions of the weld points.

Gilliland '642 discloses a method in which the workpiece is scanned in order to create a three dimensional mathematical model of the workpiece. The controller breaks the model down into planes, identifying planes that intersect, and selects the line of intersection of two planes as a welding line. The workpiece is then welded along the welding line.

The present invention, as defined in claim 1, differs from the method disclosed by Gilliland '642 in at least the following respects:

1. The image of the constituent pieces on the support surface is a two dimensional image that is viewable by the operator, not a mathematical model that exists only in the memory of the controller.

2. The positions of the weld points are determined by visual inspection of the image rather than by analysis of a three dimensional mathematical model to identify planes and lines of intersection.

The advantage that the present invention provides over the disclosure of Gilliland '642 is that it allows the operator to select weld points (and reject other possible weld points) so that the constituent pieces can be welded together in the desired configuration without welding all intersections, as in the case of Gilliland '642, thus allowing the welding to be completed more quickly and at lower cost.

The examiner relies on Gilliland et al '627 as disclosing that a welding apparatus may be controlled based on the welding location. Applicant submits that Gilliland et al '627 does not supply the deficiency in the disclosure of Gilliland '642.

Applicant requests that the foregoing amendments should be entered under 37 CFR 1.116. The amendments are necessary in order to distinguish the invention clearly from the disclosure of Gilliland '642 and Gilliland et al '627. Applicant submits that the amendments now offered clearly distinguish claim 1 over the prior art.

Claims 14 and 15 have been amended in similar fashion to claim 1. Accordingly, claims 14 and 15 are patentable for the reasons presented in support of claim 1. It follows that the dependent claims are patentable.

Respectfully submitted,

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